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09/751,659	12/30/2000	Brian James Martin	55,419 (70158)	8881

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EXAMINER

TANG, KENNETH

ART UNIT

PAPER NUMBER

2127

DATE MAILED: 05/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

14

Office Action Summary

Application No.

09/751,659

Applicant(s)

MARTIN, BRIAN JAMES

Examiner

Kenneth Tang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-42 are presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 7, 23, 31, 33, 35, and 37-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

- a. In claim 1, there is lack of antecedent basis for the term “each subset.”
- b. In claim 7, the term “interact with other” is indefinite because it is not made specifically clear what the threads, resources, and events are interacting with.
- c. There are two different claims listed for claim 23 (*see page 36*). It is not made specifically clear which one of the two is intended to be claim 23.
- d. In claims 31 and 33, “(1c1)” and “(1c2)” are indefinite because it is not made specifically clear what the meaning of that notation is.
- e. In claim 35, “claim 34 wherein method according to claim 25” is indefinite because it is not made explicitly clear what claim that claim 35 depends on, i.e. it’s a computer program product claim or method claim of claim 25.
- f. In claim 37, “(3e1)”, “(4f1)”, and “(4g1)” are indefinite because it is not made specifically clear what the meaning of that notation is.

- g. In claim 39, "(c1)" and "(c2)" are indefinite because it is not made specifically clear what the meaning of that notation is.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claim 5 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 23 of copending Application No. 09/675396 in view of Zolnowsky (US 5,826,081). Although the conflicting claims are not identical, they are not patentably distinct from each other because both computer systems comprise substantially the same elements, such as determining methodology, creating N partition locks, and modifying the locking requirements. The differences between the parent application and this case is the claimed dispatch groups and relating dispatching objects to those groups. However, Zolnowski teaches it is common knowledge in the art to have dispatcher groups in queues and that there are objects relating to the dispatcher (*col. 5, lines 46-48 and col. 1, lines*

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52-67) in order to control and synchronize when the dispatcher needs to dispatch or wait. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of combining dispatch groups and relating dispatching objects to those groups because the dispatcher groups and the related objects provide the data structure and mechanism that allows for the dispatcher to control and synchronize when the dispatcher needs to dispatch or wait. In addition, Applicant's Admitted prior art teaches that it is well known to use dispatcher objects (*see Specification, page 7, line 11*).

3. This is a provisional obviousness-type double patenting rejection because the conflicted claims have not in fact been patented as.

4. Claims 1-4 and 8-42 are rejected as a provisional obvious-type double patenting rejection as applied to claim 5 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Zolnowsky (US 5,826,081) in view of Hanrahan (Google groups, Newsgroups: comp.os.ms-windows.programmer.nt.kernel-mode).

6. As to claim 1, Zolnowsky teaches a parallel dispatching and wait signaling method for protecting data items of a dispatcher of an operating system, the parallel dispatching and wait signaling method comprising the steps of:

- creating N local locks, where $N \geq 2$ (*col. 6, lines 28-42*);
- acquiring one of the N local locks to perform one of dispatching or wait signaling operation, thereby locking a given subset of the dispatcher database (*col. 6, lines 35-38*);
- limiting access of the data items of the locked subset to the one of dispatching or wait signaling to be performed for that locked subset (*col. 1, lines 52-67*); and
- concurrently maintaining access to the data items of unlocked subsets of the dispatcher database (*col. 2, lines 18-30*).

Zolnowsky fails to explicitly teach using a database for the dispatcher. However, Hanrahan teaches using locks with a dispatcher database (*page 2, lines 20-26*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the feature of Hanrahan's dispatcher database with the dispatching locks of Zolnowsky because the dispatcher database holds the states of the threads to be executed on the processor and the locks provide the control/mechanism of the "holding." In addition, Applicant's Admitted prior art section teaches the use of dispatcher databases (*see Specification, page 8, lines 12-14*).

7. As to claim 2, Zolnowsky teaches the parallel dispatching and wait signaling method of claim 1, wherein:

- said acquiring includes acquiring a plurality of the N local locks thereby locking a plurality of subsets of the dispatcher database (*col. 6, lines 35-38*); and

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- said limiting includes limiting access of the data items of the locked plurality of subsets to the one of dispatching or wait signaling to be performed (*col. 1, lines 52-67*).

8. As to claim 3, it is rejected for the same reasons as stated in the rejection of claims 1 and

2. In addition, Zolnowsky teaches using global locks (*col. 3, lines 62-67*).

9. As to claim 4, it is rejected for the same reasons as stated in the rejections of claims 2 and

3.

10. **Claims 5-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zolnowsky (US 5,826,081) in view of Hanrahan (Google groups, Newsgroups: comp.os.ms-windows.programmer.nt.kernel-mode), and further in view of Frey et al. (hereinafter Frey) (US 6,502,103 B1).**

11. As to claim 5, it is rejected for the same reasons as stated in the rejection of claim 1. In addition, Zolnowski also teaches determining a methodology to form one or more dispatch groups including any of threads, resources, and events that frequently interact with each other (*col. 5, lines 46-48, and see Abstract*) and evaluating the operating system after said modifying the locking requirements so as to determine if the overall performance of the operating system is acceptable (*col. 5, lines 45-58*). Zolnowski teaches dispatchable objects (*col. 1, lines 52-67*) but fails to explicitly teach relating dispatchable objects to dispatchable groups. However, Frey

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teaches an Object Management Group (OMG) that relates objects with group (*col. 1, lines 64-67*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the feature of relating objects with groups in order to enhance the usability, portability, reliability and interoperability of objects (*col. 1, lines 64-67*).

12. As to claim 6, Frey teaches the method wherein said relating includes: separately identifying each dispatch group with a unique identifier identifying each dispatchable object of each group with said unique identifier (*col. 7, lines 55-60*). In addition, Applicant's admitted prior art teaches that this is also well known in the art (*see Specification, page 4, lines 11-21*).

13. As to claim 7, it is rejected for the same reasons as stated in the rejections of claims 1 and 5.

14. As to claim 8, it is rejected for the same reasons as stated in the rejection of claim 5. In addition, Zolnowsky teaches optimizing the locking requirements of the identified code path so one or more local locks are acquired and released in the identified code path, the one or more code paths being those associated with the dispatchable objects of the one or more dispatch groups touched by the identified code path (*col. 5, lines 41-44*). Also, identifying the code path must be performed before optimization can occur.

15. As to claim 9, Zolnowsky teaches the method wherein the identified code path includes a plurality of branches, and wherein said optimizing includes optimizing the locking requirements

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of the identified code path so the one or more locks being acquired and released in the code path are those associated with the dispatchable objects being touched by each branch of the identified code path (*col. 5, lines 41-44*).

16. As to claim 10, Zolnowsky teaches the method according to claim 9, wherein said optimizing includes optimizing the locking requirements of each branch of the identified code path so the one or more locks being acquired and released in each branch are those associated with the dispatchable objects being touched by said each branch (*col. 5, lines 41-44*).

17. As to claim 11, Zolnowsky teaches the method comprising the step of evaluating the modified operating system after said optimizing the locking requirements so as to determine if the overall performance of dispatching and wait signaling of the operating system is acceptable (*col. 5, lines 45-58*).

18. As to claim 12, Zolnowsky teaches determining overall performance is acceptable but fails to explicitly teach repeating said steps of optimizing and evaluating for the another identified code path. However, it would be well known and obvious to one of ordinary skill in the art to keep trying to find acceptable performance when it is found unacceptable in order to eventually find acceptable performance.

19. As to claim 13, it is rejected for the same reasons as stated in the rejection of claim 9.

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20. As to claim 14, Frey teaches the method wherein there is one of a plurality or a multiplicity of code paths that access one or more dispatchable objects (*col. 1, lines 58-67 through col.2, lines 1-2*).

21. As to claim 15, it is rejected for the same reasons as stated in the rejections of claims 5 and 7. In addition, Frey teaches determining if the dispatchable object of an updating operation belongs to a dispatch group (*col. 5, lines 7-9*), updating the dispatcher database portion (*Fig. 25, 2500 and 2508*), and releasing the local lock following updating (*col. 39, lines 9-31*).

22. As to claim 16, it is rejected for the same reasons as stated in the rejection of claim 6.

23. As to claim 17, it is rejected for the same reasons as stated in the rejection of claim 1. In addition, Frey teaches:

- updating the dispatcher database (*Fig. 25, 2500 and 2508*); and
- releasing all locks following updating (*col. 39, lines 9-31*).

24. As to claim 18, it is rejected for the same reasons as stated in the rejection of claim 3.

25. As to claim 19, Frey teaches the method wherein while acquiring the one of the one or more local locks, other portions of the dispatcher database are unlocked (*Fig. 25, 2500 and 2508, and (col. 39, lines 9-31)*).

26. As to claim 20, it is rejected for the same reasons as stated in the rejections of claims 5, 8, and 15.
27. As to claim 21, it is rejected for the same reasons as stated in the rejection of claim 6.
28. As to claim 22, it is rejected for the same reasons as stated in the rejection of claim 17.
29. As to claim 23, it is rejected for the same reasons as stated in the rejection of claims 17 and 19.
30. As to claim 24, it is rejected for the same reasons as stated in the rejection of claim 9.
31. As to claim 25, it is rejected for the same reasons as stated in the rejection of claim 15. In addition, Zolnowski teaches using an operating system (*col. 1, lines 21-30*).
32. As to claim 26, it is rejected for the same reasons as stated in the rejection of claim 6.
33. As to claim 27, it is rejected for the same reasons as stated in the rejection of claim 17.
34. As to claim 28, it is rejected for the same reasons as stated in the rejection of claim 18.
35. As to claim 29, it is rejected for the same reasons as stated in the rejection of claim 19.

36. As to claim 30, it is rejected for the same reasons as stated in the rejection of claim 25. In addition, Zolnowsky teaches a computer-readable medium bearing program code (*col. 15, lines 1-3*).

37. As to claim 31, it is rejected for the same reasons as stated in the rejection of claim 6.

38. As to claim 32, it is rejected for the same reasons as stated in the rejection of claim 17.

39. As to claim 33, it is rejected for the same reasons as stated in the rejection of claim 6.

40. As to claim 34, it is rejected for the same reasons as stated in the rejection of claim 2.

41. As to claim 35, it is rejected for the same reasons as stated in the rejection of claim 19.

42. As to claim 36, it is rejected for the same reasons as stated in the rejection of claim 17.

43. As to claim 37, it is rejected for the same reasons as stated in the rejection of claim 17.

44. As to claim 38, it is rejected for the same reasons as stated in the rejection of claim 3.

45. As to claim 39, it is rejected for the same reasons as stated in the rejection of claim 6.

46. As to claim 40, it is rejected for the same reasons as stated in the rejections of claims 25 and 30. In addition, Zolnowsky teaches a using a plurality of processors (*see title*).

47. As to claim 41, it is rejected for the same reasons as stated in the rejection of claims 2 and 6.

48. As to claim 42, it is rejected for the same reasons as stated in the rejection of claim 17.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (703) 305-5334. The examiner can normally be reached on 8:30AM - 7:00PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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